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BOTANICAL MUSEUM LEAFLETS
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PLANTAE COLOMBIANAE XIX
E PARTIBUS AMAZONICIS WITOTORUM PLANTAE FRUCTUARIAE SATIVAE NOVAE

BY
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In studiis ethnobotanicis meis de plantis alimentis indiorum witotorum e Amazonia colombianae duas arbores novas inveni: unam e genere leguminosarum, Inga; alteram e genere apocynacearum, Macoubea. In regionibus Río Karaparaná et Río Igaraparaná utraeque arbores ab indigenis coluntur.

Doctori Thomas S. Elias pro descriptione speciei Ingae novae gratias ago. Similiterque erga Patrem Miguel Junyent, Matrem Holga Edith Sajona et Sororem Ligia Maria Ochoa, propagatores doctrinae christianae catholicae in colonia San Rafael apud Río Karaparaná inferiorem, pro beneficentiis suis, praecipue mihi flores ex arbore typica praebuisse, gratus sum.

APOCYNACEAE

Macoubea witotorum *R. E. Schultes spec. nov.*

Arbore usque ad quadraginta ped. alta, dense foliosa, ex radice singulare truncis multis, in terra non inundabile culta; cortice laeve, crasso, in maculis albido-griseo, abundanter albo-lactifere. Folia valde chartacea, supra atroviridia, infra pallide viridia, late elliptica, base aequalia, apice obtusa vel rarenter subacuta, lamina 20–24

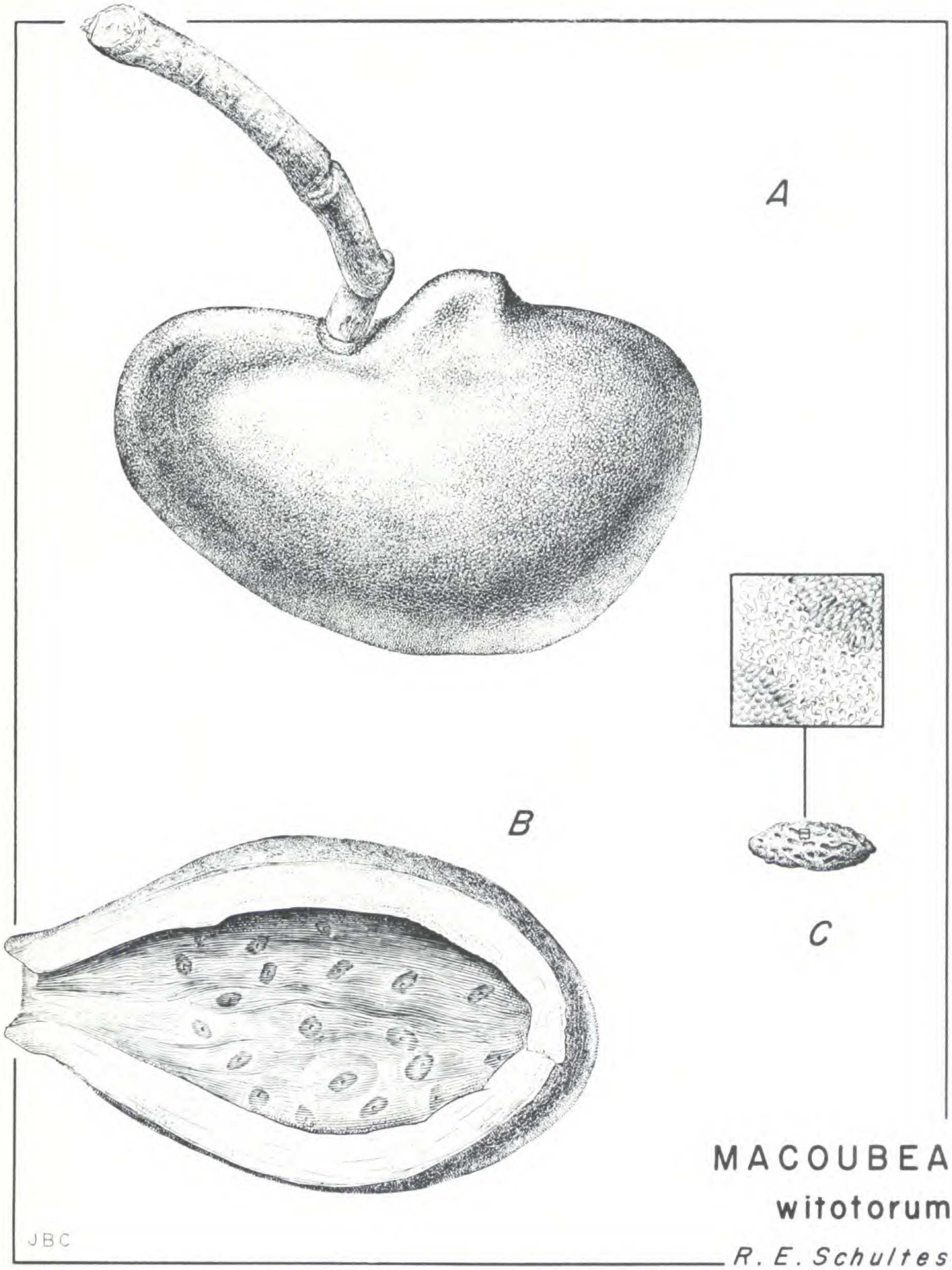
ECONOMIC BOTANY LIBRARY
OF OAKES AMES
HARVARD BOTANICAL MUSEUM

PLATE XLIX



1, leafy branch, approximately $\frac{1}{4}$ natural size. 2, inflorescence, approximately $\frac{2}{3}$ natural size. 3, flower, approximately $1\frac{1}{3}$ natural size. 4, basal portion of flower dissected, approximately twice natural size. 5, stamen, approximately 4 times natural size. 6, corolla lobe, approximately 4/5 natural size. *Drawn by* JOSHUA B. CLARK

PLATE L



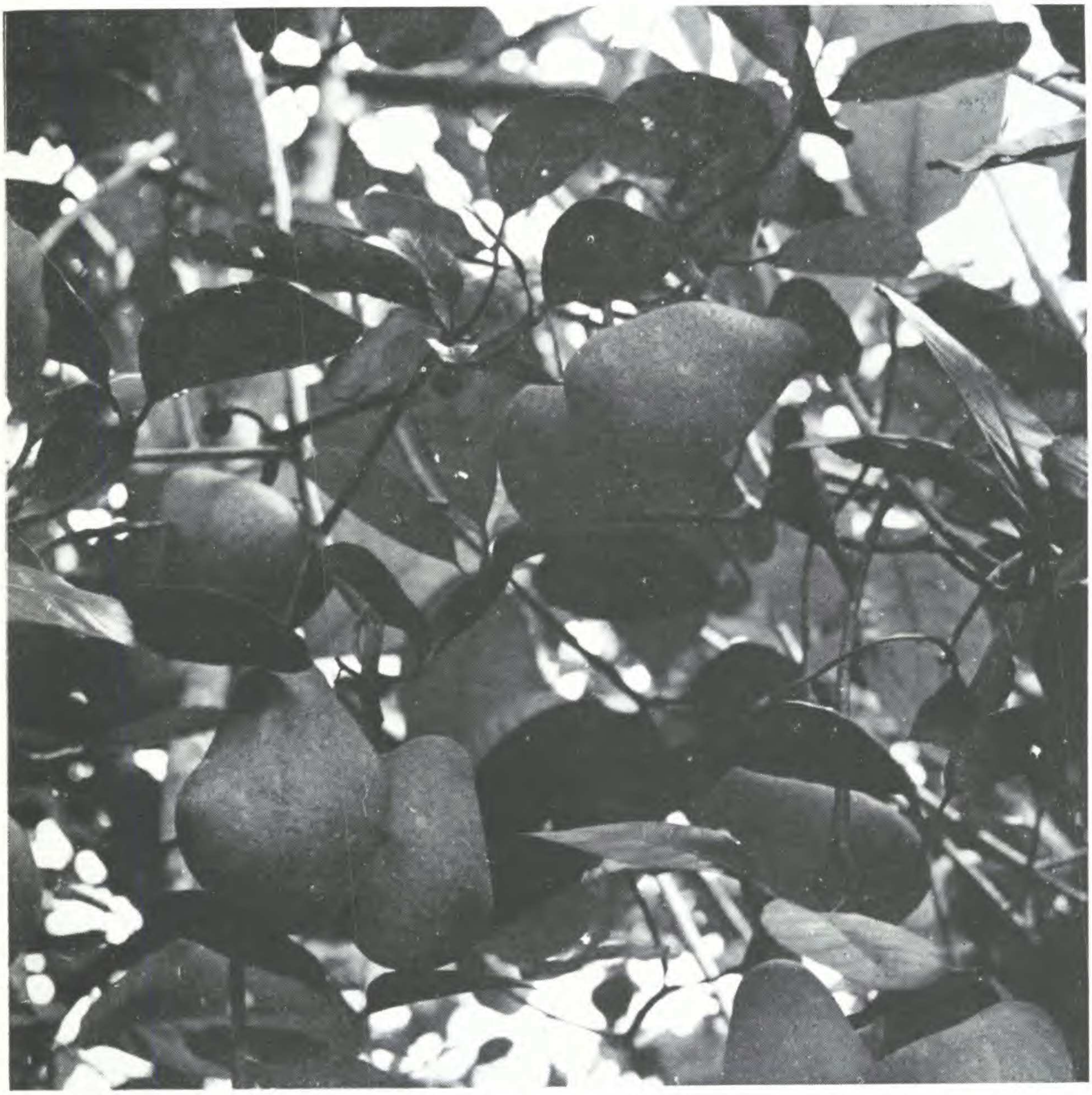
A, fruit, approximately $\frac{1}{2}$ natural size. B, dissected fruit, showing placement of seeds, approximately $\frac{1}{2}$ natural size. C, seed, approximately natural size, with detail of surface greatly enlarged.

Drawn by JOSHUA B. CLARK

cm. longa, 11–15 cm. lata, utrinque glabra, nervis utrinque prominentibus; petioli 1–2.5 cm. longi. Inflorescentiae corymbosae, multiramosae, usque ad trigintiflorae, bracteatae, minutissime griseo-puberulae, axibus principalibus robustis, usque ad 3 cm. longis, pedicellis brevibus, plerumque 1 cm. vel brevioribus, minute bracteolatis. Flores albido flavi vel eburnei, non fragranti, plus minusve 25 mm. longi. Calyx persistens; corollae lobis vix contortis, base glandulosis, ovatis, 15 mm. longis et basin 10 mm. latis; corollae tubo quam lobis multo breviori, in fauce albo-piloso; antheris sessilibus, sagittatis, usque ad 4 mm. longis; ovario dense albo-piloso, stylo 0.8–1.2 mm. longo annulo crasso atrobrunneo coronato et crista quinquelobata capitata in acumine 0.8 mm. producto. Apocarpium magnum, usque ad 16 cm. longum, 11 cm. ×9 cm. in diametro, irregulariter reniforme vel stomachiforme, petioli basin versus submammiforme, extus in maturitate brunneum vel subaureo-brunneum, sordide granuloso-squammulosum, intus viridulum praeter seminarum lectum atrobrunneum, usque ad 15 mm. crassum, pulpa brunneola liquida dulce; seminibus plurimis, rubrobrunneis, curvatim elliptico-oblongis, superficie dense et grosse vermiculato-foveolatis, inter foveas minutissime cristatis, cristis magnopere minute indumento albo-spongioso indutis, 16 mm. longis, 6 mm. latis; pedunculo lignoso, 10 mm. crasso, usque ad 13 cm. longo, calyce valde persistente.

COLOMBIA: Comisaria del Amazonas, Rio Karaparaná, San Rafael (in vicinity of El Encanto), near confluence with Rio Putumayo. "Tree up to 40 ft. Many trunks from root. Cultivated. Bark smooth, light grey with whitish patches. Latex copious, white, sticky. Leaves thick, coriaceous. Outside of fruit brown; inside light green except where seeds lie (which is brown). Pulp liquid, light brown, sweet, eaten. Seeds dark brown. Seeds and pulp from one fruit 250 cc. Witoto name: *oo-rroo'-soo-je̮* (in Rio Karaparaná), *oo-koo-je̮* (in Rio Igaraparaná)". March 30–April 2, 1970. *Richard Evans Schultes 26072* (TYPUS in Herb. Gray; TYPI DUPLICATI in Econ. Herb. Oakes Ames;

Plate LI



Fruit of tree from which the type material of *Macoubea witotorum* was taken. *Photograph:* R.E. Schultes

Herb. Nac. Colomb.).—Same locality. "Flowers yellow-cream or whitish yellow, without fragrance. Taken from type tree". August 1970. *P. Miguel Junyent sine num.* (FLORIS TYPI in Herb. Gray; Econ. Herb. Oakes Ames; Herb. Nac. Colomb.).

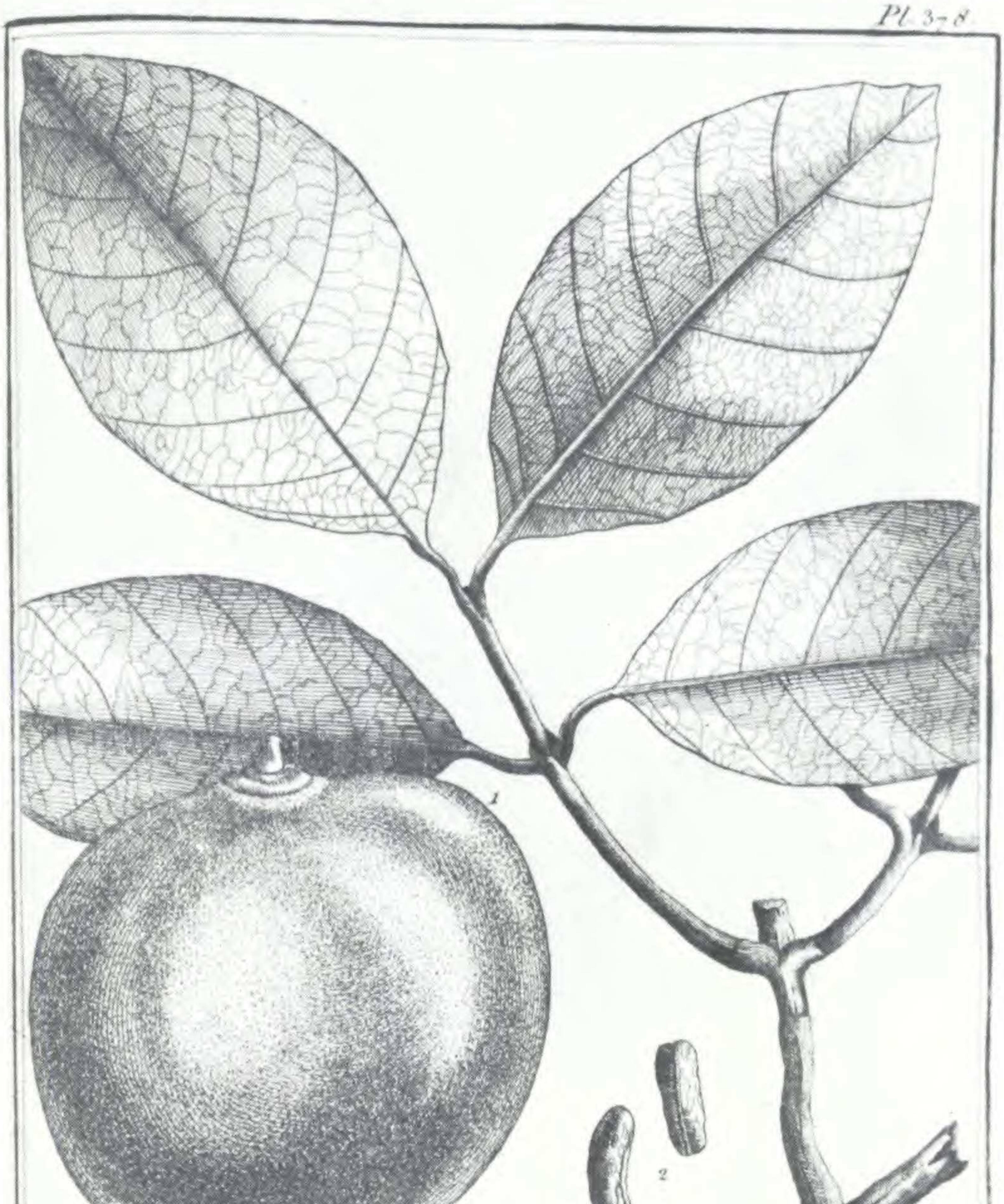
Genus Macoubea, ut hodie comprehenditur, duas species includit: *M. guianensis* Aubl., quae totam terram regionem guianarum atque Brasiliae amazonicae inhabitat, sed varietas eius, *M. guianensis* var. *pubiflora* Monachino, non nisi ex loco typi prope civitatem Iquitos, e regione Amazoniae peruvianae observatur; *Macoubea Sprucei* (Muell.-Arg.) Markgraf, cuius typus a Richard Spruce apud Río Uaupés juxta Brasiliae Colombiaeque terminum collectus est, tantum in regione Río Negro Brasiliae amazonicae afferitur; distributio varietatis eius, *Macoubea Sprucei* var. *pauciflora* (Spr. ex Muell.-Arg.) Monachino, cum specie congruit.

Secundum Monachino (Lloydia 8 (1945) 296), "species Macoubearum inter sese arcte affines. Differentiae primae quae in elementis variis discernendae possint in florium proportionibus magnitudinibusque fundantur, sed nequaquam constantes sunt".

Macoubea witotorum a speciebus adhoc cognotis non solum florium characteres proportionesque differt, sed etiam a *M. guianense* fructus formae proportionesque valde dissimilis est.

Praeterea haec species nova ab utraque specie florium characteribus minoribus distingui potest. *Macoubea witotorum* corollae lobi 15 mm. longi atque 10 mm. lati metiuntur, dum in *M. guianense* 3–4 mm. et in *M. Sprucei* 5–7 mm. lati sunt; corollae tubus quam lobus multo brevior qui in *M. guianense* quam lobus dimidium vel longior, et in *M. Sprucei* prope eadem aequilongus est. *Macoubea witotorum* a *M. guianense* fructus forma proportioneque facile distinguitur: in priore mericarpio immaniter reniforme vel stomachiforme est, 16 cm. longo

Plate LII



Macoubea Guyannensis

Illustration of *Macoubea guianensis*, published in Aublet: *Plantes de la Guiane Française* 2 (1775) t. 378.

et 11 cm. × 9 cm. in diametro metitur; in posteriore, globoso, circiter 6–8 cm. in diametro metitur.

Secundum exiguos libros, Macoubea arbores sunt silvicola et semper sua sponte crescunt et silvas in terra humida sed supra inundationem annuam preoptans. *Macoubea witotorum* est arbor quae ut videtur solum in cultura exsistit et semper in terra alta, bene siccata, nunquam inundata prosperat.

Indigenae tribus witotorum ut arbores solum in regione Ríos Karaparaná et Igaraparaná coleri affirmant, et verum est a me nunquam ipsis in multis meis annis explorationis in regionibus amazonicis invenitis per quos annos cogitationes meas plerumque versus plantas cultas dirigi. Si naturaliter occurrit, ea est rara.

Indigenae fructus parte terminale acutiore praecidunt vel in eo foramen faciunt et copiosam pulpam fulvam ducunt quae in forma liquidi dulcis adest. Infeliciter, studia nutrimenta huius liquidi non facta sunt, sed sine dubio sacchari abundantia saturata est. Semina non devoruntur.

Arbores mensibus martio aprileque fructus abundanter ferunt. Unusquisque exempla quae in cultura vidi multas (usque ad quinque vel sex) truncos corpulentos ex radice unico surgentes habuerunt. Utrum hoc proprium incrementum mutilationibus trunci primarii an ab indigenis eventus est non potuit, sed indigenae ipsae arborem normaliter hoc modo crescere affirmant et se nullo modo arborem ad conditionem faciendam truncare vel secare. Certe, hae incrementi consuetudo mensuram arbore coronae magnopere auget atque, propter hoc, abundantem segetem fructuum.

Doctor C. Sastre (Museum d'Histoire Naturelle, Paris) specimina florescentia quae ut videtur esse eiusdem Macoubeae species in pago La Chorrera prope Río Igaraparaná colligit.

Plate LIII


DIAGONAL SHADING ON INSET INDICATES AREA SHOWN IN DETAIL BELOW
COLOMBIA
QUITO
ECUADOR
PERÚ
BRAZIL
RÍO CAQUETÁ
RÍO PUTUMAYO
IQUITOS
RÍO AMAZONAS
LETICIA
ARARACUARA
FLORIDA
UNIÓN
ÚLTIMO RETIRO
ENTRE RÍOS
SABANA
LA CHORRERA
ORIENTES
STA. CATALINA
CONCEPCIÓN
RÍO KAHUINARÍ
RÍO KARAPARANÁ
EL RETIRO
FILADELFIA
MENAJE
PROVIDENCIA
RÍO IGARAPARANÁ
ABISINIA
EL ENCANTO
SOLEDAD
ENEA
INDOSTAN
MEDIO DÍA
ARICA
PUTUMAYO
KARAPARANÁ-IGARAPARANÁ REGION of the COLOMBIAN AMAZON

COLOMBIA: Comisaría del Amazonas, Río Igaraparaná, La Chorrera. "Arbre, 10 m., latex blanc abondant, petales jaunes, fruits comestibles, pulpe liquide avec graines noires. Nom witoto: *ukurai.*" September 29, 1973. *C. Sastre 2340.*

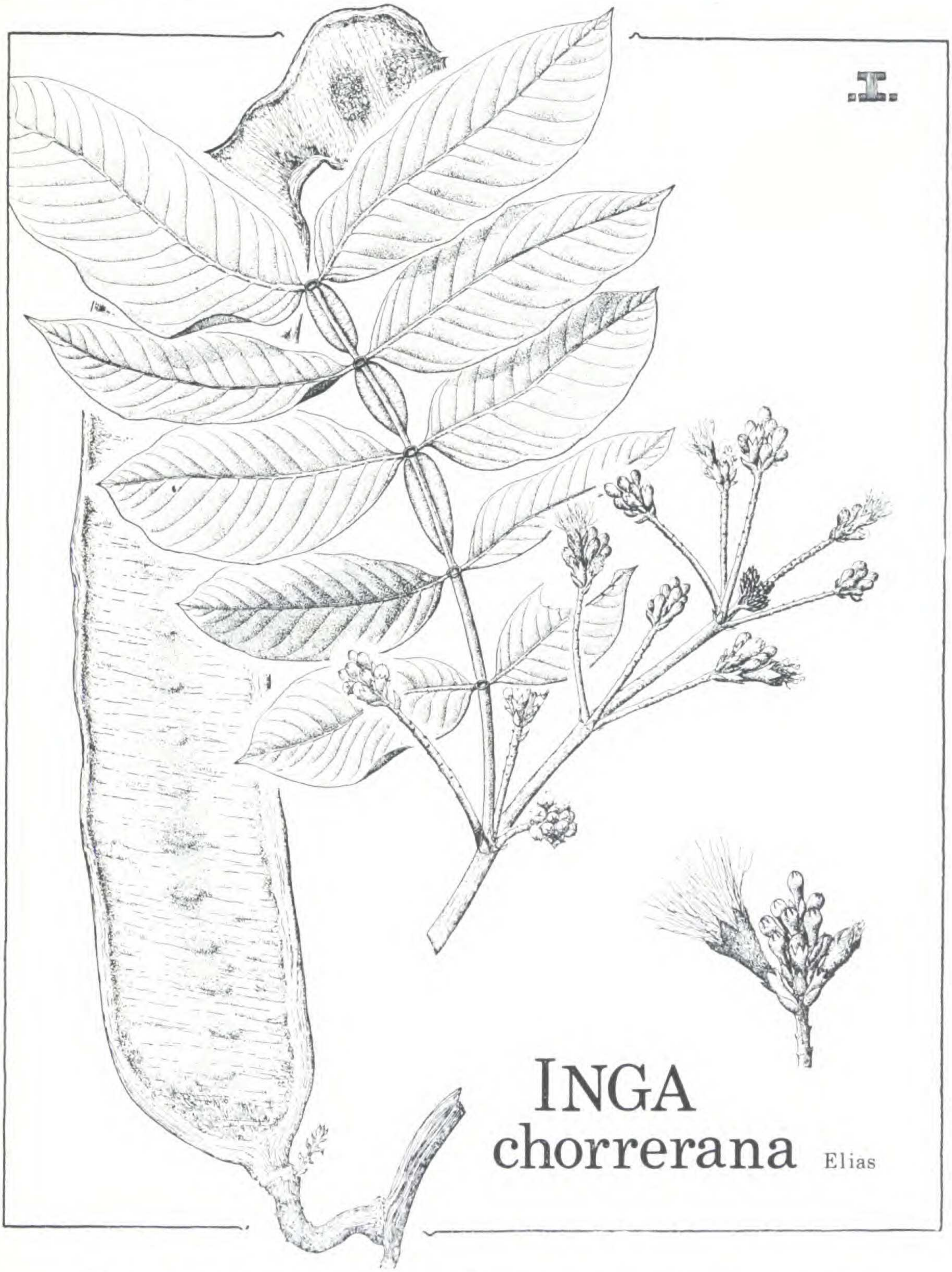
LEGUMINOSAE

Inga chorrerana *Elias spec. nov.*

Arbores parvae; ramis teretibus, sparse ferrugineo-tomentellis, lenticellis conspicuis. Ramuli ferrugineo-tomentosi. Folia petiolis 4–5 cm. longis, dense ferrugineo-tomentosis, partim inter juga superiora foliolorum dilatatis; ala late ellipticis vel obovatis, 6–12 mm. latis. Foliola 6-jugata, petiolulis 2–3 mm. longis, dense ferrugineo-tomentosis; lamina elliptica, apice apiculata, basi rotundata, 5.5–15 cm. longa, 2.8–5.5 cm. lata, subcoriacea, nervis lateralibus 16–20, subtus conspicuis; glandulae rhachidis 3–3.5 mm. diam., orbiculares; stipules non visae. Inflorescentiae multiflorae, spiciformes, 3–5 cm. longae, terminales aut in axillis superioribus dispositae; pedunculis 1–2 cm. longis, dense ferrugineo-tomentosis; bracteis late ovalis, apice acuminatis vel subapiculatis, 5–6 mm. longis, dense ferrugineo-tomentosis; calyx cylindricus, sessilis, 7–9 mm. longus, sparse tomentosus, lobis ovatis 1–1.5 mm. longis; corolla cylindrica, apice vix dilatata, 1.7–1.9 cm. longa, dense villosa, lobis ovatis 2.5–3 mm. longis; stamina tubo vix exserto; filamenta alba, ad 3.5 mm. longa; antherae dorsifixae; pistillum sessile, teres, ca. 2 mm. longum, glabrum. Legumen coriaceum, in maturitate areis ciliorum diffusis ferrugineo-villosum, plano-compressum, ad 45 cm. longum, 5–7 cm. latum, ca. 1 cm. crassum, marginibus vix elevatis. Semina sine testa, cotyledonibus 3–3.2 cm. longis, 1 cm. latis.

COLOMBIA: Comisaría del Amazonas, Río Igaraparaná, La Chorrera. Small tree. Pulp of fruits edible. Cultivated. Fruit 1–1½ ft., long, slender, thickness of index finger. Flowers white, fragrant. June 6, 1942. *Richard Evans Schultes 3896.* (TYPUS in Herb. Gray).

PLATE LIV



Habit drawing, approximately $\frac{1}{3}$ natural size. Pod, approximately $\frac{3}{8}$ natural size. Inflorescence, approximately natural size.

Drawn by IRENE BRADY

Hanc speciem arborem fructiferem ob siliquaram magnarum pulpa albam dulcem semina cingens coleri ferunt.

Doctor Elias scripsit: "*Inga chorrerana* in Sectione Inga, Series Spectabiles propter proprietates florales fructuosas debet. Ab aliis speciebus affinibus folio sexjugati, folium apice apiculato atque fructu pubescente distingueri potest. Ad *Ingam spectabilem* Willd. propinqua atque fortissime proxima ad *I. Goldmannii* Pittier ut videtur est."